

LESSON PLAN COVER SHEET  
UNCLASSIFIED  
CLASSIFICATION

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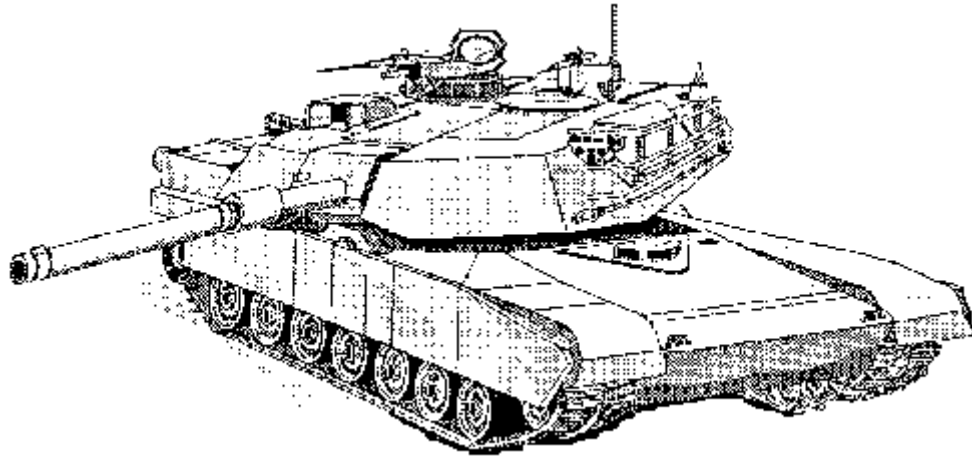
This is a self-paced instruction dealing with supply planning in a Marine Air-Ground Task Force (MAGTF). The text is designed to provide a common sense approach to determining unit requirements of the three classes of supply that we consider "war-stoppers." Those classes are I (Subsistence), III (Petroleum, Oils, Lubricants), and V (Ammunition).

This text is a self-teaching vehicle; a discussion in which you are both the student and the instructor, with the text as the means provided to enable you to serve in both capacities. You will be directed to read a phase of the text (Study Resource); then asked a question (Practice Exercise) concerning what you read; and finally, directed to a page to determine if your response was the desired one.

#### LESSON PURPOSE

After completing this self-paced text you should be able to:

1. When provided with a scenario and the necessary ration planning figures, compute the Class I (Subsistence) requirement for a given unit.
2. When provided with a scenario and water consumption factor tables, compute the water requirement for a given unit.
3. When provided with a scenario and the Class III (POL) planning information from the TAM, compute the Class III requirements for a given unit.
4. When provided with a scenario and extracts from MCO 8010.1E and MCO P8011.4H, use the appropriate Combat Planning Factor Table to plan ammunition requirements for a given unit and calculate ammunition weight.



STUDY RESOURCE #1: DETERMINING SUPPLY REQUIREMENTS

Supply requirements are the statement, in a plan or request, of the need for specific quantities of supplies and equipment over a specific period of time. Simply put, it is an expression in some form of what you need for a given period of time. The way the requirement is expressed will vary depending on the level of the unit. The Marine Expeditionary Force (MEF) planner may, in deliberate planning, determine his Class I (Subsistence) requirement in pounds per man per day and express that requirement in short tons. On the other hand, the CSS planner at the unit level, i.e., the battalion S-4, will determine his Class I requirement by the number of meals required to feed his deployed force and express the requirement in numbers of cases of MREs. Our manuals provide data that is a starting point for supply planning, but the best data is derived from an experienced analysis of METT-TSL and knowledge of the unit's equipment.

Let's take a look at our supply planning source documents.

1. Table of Organization (T/O). The T/O portrays the number of officers and enlisted personnel, both USMC and Navy, in all Marine Corps organizations. It also lists the numbers and kinds of individual weapons rated by each organization.
2. Table of Equipment (T/E). The T/E lists each piece of equipment organic to each Marine Corps organization. This list will identify fuel consumers.
3. Table of Authorized Materiel (TAM). The TAM provides physical data on weight and cube of Classes I (Rations) and VII (Major End Items) materiel as well as selected Classes II (Individual Equipment) and IV (Construction Material). Fuel consumption data for equipment are included and there is a section on Combat Active Replacement Factors (CARF). Unfortunately, since 1982, the TAM has been published in microfiche format only. Consequently, the printed TAM is out of date, but still a good reference source for older equipment.
4. Logistics Management Information System (LMIS). Data base which provides physical data items such as weight and cube and fuel consumption on major end items. LMIS has replaced the TAM and should be the primary CSS planning reference.

5. MCO 8010.1E Class V(W) Supply Rates for Fleet Marine Force Combat Operations. MCO 8010.1E provides supply factors for planning ground ammunition for combat operations. It lists, by weapon system, the type and amount of ammunition for initial planning purposes. It is a planning tool used by ammunition officers at all levels within the Marine Corps.

6. MCO P8011.4H Marine Corps Table of Allowance for Class V(W) Material. MCO P8011.4H, chapter two, provides supply factors for planning ground ammunition for combat operations. It lists, by DODIC, the unit pack, weight and cube of ammunition.

7. FM 10-52 Water Supply in Theater of Operations. This Army field manual provides planning data for combat operations of Army units. Selected tables, such as Table B-1, can be applied to Marine Corps units.

8. FM 10-23 Basic Doctrine for Army Field Feeding and Class I Operations Management. This Army field manual provides planning data for combat operations of Army units. Selected tables, such as Table 4-3, weight, size and cube figures for T-rations and MREs, can be applied to Marine Corps units.

PRACTICE EXERCISE #1:

1. The \_\_\_\_\_ and \_\_\_\_\_ provides fuel consumption data for Class VII items of equipment.
2. The \_\_\_\_\_ provides a listing of fuel consuming equipment organic to each Marine Corps organization.
3. MCO \_\_\_\_\_ provides detailed planning information concerning amounts of ground ammunition for combat operations.
4. The \_\_\_\_\_ provides the number of officers and enlisted personnel, both USMC and Navy, in all Marine Corps organizations, to include the numbers and kinds of individual weapons rated by each organization.
5. \_\_\_\_\_ is an Army manual that provides useful planning data on water consumption.

ANSWER TO PRACTICE EXERCISE #1:

1. The Table of Authorized Materiel (TAM) and Logistics Management Information System (LMIS) provides fuel consumption data for Class VII items of equipment. However, only the TAM provides Class I (Subsistence) planning data and Combat Active Replacement Factors.
2. The Table of Equipment (T/E) provides a listing of all equipment, including fuel consumers, organic to each Marine Corps organization.
3. MCO 8010.1E provides detailed planning information concerning amounts of ground ammunition for combat operations.
4. The Table of Organization (T/O) provides the number of officers and enlisted personnel, both USMC and Navy, in all Marine Corps organizations, to include the numbers and kinds of individual weapons rated by each organization.
5. FM 10-52 is an Army manual that provides useful planning data on water consumption.

STUDY RESOURCE #2: CLASS I (SUBSISTENCE)

1. The terms describing various assemblies of food components are defined as follows:

a. A ration is the allowance of food for one person for one day as prescribed by military regulations (a ration = three meals).

b. A meal is a nutritionally balanced food unit consisting of approximately one-third of the prescribed daily requirement of a ration (three meals = one ration).

c. A ration supplement is a collection of food, beverage, condiment, or comfort items intended to add to the minimum essentials of a specific operational food item in terms of nutrition, palatability, and enhancement of morale.

d. Within the Marine Corps, the following types of rations are utilized to support operations:

(1) "A" Ration. Includes both perishable and semiperishable items and is designed for large group feeding in garrison or the field. The "A" ration is composed mainly of fresh or fresh frozen subsistence items. Food preparation facilities and refrigerated storage spaces are a requirement when this ration is utilized for feeding. Consequently, perishable items generate increased transportation, fuel, equipment, and water requirements. The work load, liquid and solid waste disposal, and sanitation problems are increased.

(2) "B" Ration. Consists of semiperishable items. This ration is designed for large group feeding when cooking facilities are available and can be used. Composed primarily of canned and dehydrated foods, this ration is packaged in bulk containers of various sizes. The food is susceptible to damage from freezing, heating, insects, rodents, humidity, punctures, and breakage.

(3) T-Rations. These are heat and serve operational rations consisting of semiperishable items. T-rations are designed to sustain Marines in highly mobile field situations with good quality, nutritionally adequate, fully cooked tray pack entrees, vegetables, desserts, and starches.

(4) Packaged Operational Ration (POR). The packaged operational ration is designed for individual or small group feeding when the tactical situation is unstable so that cooking facilities cannot be used. The packaged operational ration used by the Marine Corps is currently the Meal, Ready-to-Eat, Individual (MRE). The MRE provides individual meals containing food components which are ready to eat even when consumed under conditions precluding preparation, except reconstitution of beverages. The MRE is suitable



for use in the combat zone and under all circumstances where operational conditions preclude other means of subsistence. The Surgeon General revised policy (June 1995) allowing MREs to be consumed as the sole source of subsistence for up to 21 days. In extreme cold weather situations, a fourth MRE should be issued to each man each day to provide the increased caloric intake required if the Ration, Cold Weather, is unavailable. The basic guidance, as found in the Marine Corps War Reserve Manual, on mixing the various types of rations when deploying a MEF (FWD) size unit is 40% MREs and 60% B rations. A rations are not in our prepositioned War Reserve.

3. The following Class I planning information is provided from FM 10-23.

<b>TABLE 4-3. WEIGHT, SIZE, AND CUBE FIGURES FOR T-RATIONS AND MREs</b>		
T-Rations	Module Size = 18 servings	23.75" long 13.00" wide 8.75" high
	Module Weight	35 lb (average)
	Pallet Size 24 modules per pallet (432 servings)	Each pallet measures 40" by 48" by 39" Each empty pallet weighs 30 lb T-Ration weight per pallet = 840 lb Total weight per pallet = 870 lb (840 + 30) Each pallet equals 28 cu ft Weight per cu ft is 16.07 lb
MREs	Box Size = 12 servings	19.01" long 12.8" wide 5.9" high
	Box Weight	21 lb
	Pallet Size 48 boxes per pallet (576 servings)	Each pallet measures 40" x 48" by 40" and weighs 30 lb empty MRE weight per pallet = 1,008 lb Total weight per pallet = 1,038 lb (1,008 + 30) Each pallet equals 46.61 cu ft Weight per cu ft is 22.27 lb

4. Let's now look at how we would compute the MRE and T-Ration requirement for one day for an infantry battalion in the field.

Let's say we have a T/O strength of an infantry battalion (rein) with a total of 1139 Marines and Sailors. The commanding officer has advised he wants one meal to be "T-Rats" and two will be MREs.

#### Computing MRE and T-Rat Requirements

We want to compute the number of meals (MRE and T-Rat) required for one day of supply (DOS) for this battalion.

$$\begin{array}{l} \text{T-Rat: } \frac{1139}{\text{man}} \times \frac{1}{\text{meals/day}} = \frac{1139}{\text{Total Meals}} \\ \text{MRE: } \frac{1139}{\text{men}} \times \frac{2}{\text{meals/day}} = \frac{2278}{\text{Total Meals}} \end{array}$$

#### Computing MRE and T-Rat Pallets

Now we want to compute the quantity of warehouse pallets of MREs and T-Rats that will be required for one DOS. We calculate the cube, weight and therefore determine transportation requirements.

T-Rat: There are 24 modules (18 meals each) per pallet

$$\frac{1139}{\text{meals}} \div \frac{18}{\text{meals/module}} = \frac{63.3}{\text{modules}} \text{ or } \underline{64} \text{ modules (rounded off)}$$

$$\frac{64}{\text{meals}} \div \frac{24}{\text{module/pallet}} = \frac{2.66}{\text{modules}} \text{ or } \underline{3.0} \text{ pallets (rounded off)}$$

MRE: There are 48 cases (12 meals each) per pallet

$$\frac{2278}{\text{meals}} \div \frac{12}{\text{meals/case}} = \frac{189.8}{\text{cases}} \text{ or } \underline{190} \text{ cases (rounded off)}$$

$$\frac{190}{\text{cases}} \div \frac{48}{\text{cases/pallet}} = \frac{3.9}{\text{pallets}} \text{ or } \underline{4.0} \text{ pallets (rounded off)}$$

#### Computing MRE and T-Rat Weights

FM 10-23 tells us (page 8 of this SPT) that each case of MRE weighs 21 pounds and each pallet weighs 30 lbs empty. Consequently, we can calculate MRE weight by:

$$\begin{array}{l} 48 \text{ cases} \times 21 \text{ lbs/case} + 30 \text{ lb pallet} = 1,038 \text{ lbs} \\ 1,038 \text{ lbs/pallet} \times 4 = 4,152 \text{ lbs} \end{array}$$

The same table tells us that each module of T-Rats weighs 35 lbs and each pallet weighs 30 lbs empty. Consequently, we can calculate T-Rat weight by:

$$\begin{aligned} 24 \text{ modules} \times 35 \text{ lbs/module} + 30 \text{ lb pallet} &= 870 \text{ lbs} \\ 870 \text{ lb/pallet} \times 3 &= 2,610 \text{ lbs} \end{aligned}$$

#### Transportation Requirements

As a general rule, a 5-ton truck (M923) holds four warehouse pallets (40" x 48"). Therefore two 5-ton trucks will be required to transport four MRE and three T-Rat pallets.

PRACTICE EXERCISE #2:

1. A \_\_\_\_\_ is a nutritionally balanced food unit consisting of approximately one-third of the prescribed daily requirement of a ration.
2. Compute the Class I requirement for an infantry battalion of 966 Marines and Sailors subsisting on MREs and T-Rats for three days. The commander has stated that, "the first day's meals will be all MREs and after that I want T-Rats for breakfast and dinner, with an MRE for lunch." Compute: 1) Meals per day; 2) Totals for three days; 3) How many pallets?; 4) How many 5-ton trucks to lift pallets?

ANSWER TO PRACTICE EXERCISE #2:

1. A meal is a nutritionally balanced food unit consisting of approximately one-third of the prescribed daily requirement of a ration.
2. Compute the Class I requirement for an infantry battalion of 966 Marines and Sailors subsisting on MREs and T-Rats for three days. The commander has stated that, "the first day's meals will be all MREs and after that I want T-Rats for breakfast and dinner, with an MRE for lunch."

Compute meals per day

$$966 \times 3 \text{ meals/day} = 2,898 \text{ total meals required per day}$$

Computing Total MRE Requirement

$$\text{Day 1: } 966 \times \frac{3}{\text{meals/day}} = 2898 \text{ meals}$$

$$\text{Day 2: } 966 \times \frac{1}{\text{meal/day}} = 966 \text{ meals}$$

$$\text{Day 3: } 966 \times \frac{1}{\text{meal/day}} = 966 \text{ meals}$$

$$\text{TOTAL: } \frac{2898}{\text{day 1}} + \frac{966}{\text{day 2}} + \frac{966}{\text{day 3}} = 4830 \text{ total MRE meals}$$

Computing Total T-Rat Requirement

$$\text{Day 1: Zero meals}$$

$$\text{Day 2: } 966 \times \frac{2}{\text{meals/day}} = 1932 \text{ meals}$$

$$\text{Day 3: } 966 \times \frac{2}{\text{meals/day}} = 1932 \text{ meals}$$

$$\text{TOTAL: } \frac{\text{zero}}{\text{day 1}} + \frac{1932}{\text{day 2}} + \frac{1932}{\text{day 3}} = 3864 \text{ total T-Rat meals}$$

Compute Total MRE Pallets

$$\frac{4830}{\text{total meals}} \div \frac{12}{\text{meals/case}} = \frac{403}{\text{case}} \div \frac{48}{\text{case/pallet}} = \frac{8.4}{\text{pallets}} \text{ or } 9.0 \text{ (rounded off)}$$

Compute Total T-Rat Pallets

$$\frac{3864}{\text{total meals}} \div \frac{18}{\text{meals/module}} = \frac{215}{\text{modules}} \div \frac{24}{\text{module/pallet}} = \frac{8.95}{\text{pallets}} \text{ or } 9.0 \text{ (rounded off)}$$

Transportation

Four pallets per 5-ton

9 MRE and 9 T-Rat pallets = 18 pallets  $\div$  4 = 4.5 or five 5-ton trucks to haul the load

When conducting calculations for MRE pallets, it is best to round off since the cube and square for that additional pallet will be required for embarkation purposes.

STUDY RESOURCE #3: WATER

1. Water is a critical combat commodity required for personal consumption, sanitation, cooking, maintenance, equipment operation, decontamination, and other purposes. Requirements planning must consider individual planning factors and should be applied as appropriate to the level of the organization, tactical situation, and command policies such as rations to be used, bath/shower frequency, and laundry service to be provided. A sample table is provided from FM 10-52 for planning water consumption as shown below:

<b>TABLE B-1. TEMPERATE ZONE FACTORS</b>		
<b>Company</b>		
<b>Function</b>	<b>Daily Gallons-Per-Man Requirements</b>	
	<b>Sustaining</b>	<b>Minimum</b>
Drinking	1.5	1.5
Personal Hygiene	1.7	0.3
Field Feeding	<u>0.3</u>	<u>0.8</u>
Subtotal	3.5	2.6
+10% waste	<u>0.4</u>	<u>0.3</u>
<b>TOTAL</b>	3.9	2.9
<b>Battalion</b>		
<b>Function</b>	<b>Daily Gallons-Per-Man Requirements</b>	
	<b>Sustaining</b>	<b>Minimum</b>
Drinking	1.5	1.5
Personal Hygiene	1.7	1.0
Field Feeding	<u>2.8</u>	<u>0.8</u>
Subtotal	6.0	3.3
+10% waste	<u>0.6</u>	<u>0.3</u>
<b>TOTAL</b>	6.6	3.6
<b>Regiment/Division</b>		
<b>Function</b>	<b>Daily Gallons-Per-Man Requirements</b>	
	<b>Sustaining</b>	<b>Minimum</b>
Drinking	1.5	1.5
Personal Hygiene	1.7	1.0
Field Feeding	2.8	0.8
Division-Level Medical Treatment	<u>0.4</u>	<u>0.4</u>
Subtotal	6.4	3.7
+10% waste	<u>0.6</u>	<u>0.4</u>
<b>TOTAL</b>	7.0	4.1
<b>Corps</b>		
<b>Function</b>	<b>Daily Gallons-Per-Man Requirements</b>	
	<b>Sustaining</b>	<b>Minimum</b>
Drinking	1.5	1.5
Personal Hygiene	1.7	1.0
Field Feeding	2.8	0.8
Division-Level Medical Treatment	0.4	0.4
Hospital-Level Medical Treatment	<u>0.7</u>	<u>0.7</u>
Subtotal	7.1	4.4
+10% waste	<u>0.7</u>	<u>0.4</u>
<b>TOTAL</b>	7.8	4.8

PRACTICE EXERCISE #3:

Compute the daily water requirement of a 966-man infantry battalion in the field in a temperate climate with no laundry or shower facilities and subsisting on one MRE and two T-Rats per day. Use the figures from the table on page 13.





ANSWER TO PRACTICE EXERCISE #3:

The table lists the following usage figures:

Drinking Requirement	1.5 gal
Personal Hygiene	1.7 gal
Field Feeding	2.8 gal
Waste	<u>0.6 gal</u>
TOTAL	6.6 gal

966 men x 6.6 gal = 6,375.6 gal per day. The infantry battalion rates 190 5-gallon plastic water containers for a total capacity of 950 gallons. Using only its organic water cans, the battalion would have to cycle those cans approximately seven times to deliver the daily water requirement. Other assets generally available to the battalion through attachments or the Combat Service Support Elements are the M149A-2 400-gallon water trailer (water buffalo), the 1,000 gallon M-50 water truck, and the sixcon 900 gallon water pods carried on the Logistics Vehicle System (LVS). The LVS can easily carry three sixcon pods for 2,700 gallons of water "off-road." The distribution or transportation of those almost 6,500 gallons of water required daily will be the primary challenge of the battalion S-4.

STUDY RESOURCE #4: CLASS III (PETROLEUMS, OILS, AND LUBRICANTS)

1. Computing requirements for Class III supplies will, unfortunately, require vast amounts of the proverbial "stubby-pencil work." There are some automated systems available for use by the logistician which will get you "in the ball park," but the final figures obtained by using these systems will require some manipulating and "tempering with judgment."
2. The primary reference that the Marine Corps has as a source of fuel usage data is the LMIS and a secondary source is the TAM. Unfortunately, the TAM published in "hard-copy" format is out of date and not used for equipment introduced after 1982. As a logistician, it would be wise to seek out access to the LMIS item data file. However, the TAM provides good detail for Class III requirements and is still a useful tool. Other useful references include TM 11275-15/2C Characteristics of Engineer Equipment, and TM 11240-15/4B Motor Transport Technical Characteristics Manual.
3. The TAM lists, by TAM number sequence, the Marine Corps fuel consuming items; tells what types of fuel they consume (i.e., "D" for diesel and "G" for MOGAS (gasoline)); the gallons of fuel per hour that the items use during normal operations; the hours per day that the items are used during normal operations; and the gallons of fuel per day that the items will use during a normal day.
4. An example of the LMIS item data file and the TAM Class III usage charts are provided.

LMIS ITEM DATA FILE		DESCRIPTIVE/REFERENCE DATA		DATE EFFECTIVE: 930215	
Identifying Data		Management Codes		Management Indicators	
AMCN/DODIC: E188-VII-M Name of Item: Tank, Combat, FT, 120mm Gun Model No: M1A1 CNSN: 2350-01-0871095 I.D. No: 08953A RCN: 03028091		SAC: 3 TIDC: Item Code: 5 Density Code: N Stdzn Cat Code: Wpns Syst Code: UK NATO Equip Code:		Cmbt/Miss Essential: Y Controlled Item: Y Float: Y CSS: N MSL: N SET: No Units/Set: 0 IFIC: 0	
Acquisition Info		Acquisition Leadtimes		Life Cycle Info	
APS: WF 11 APO: 241/CBGT GOR: ROC: SPA 1.01 Sep 75 LAP No: 06-79-01 LAP Date: 01/17/86 ALO No: 8420.13 ALO Date: 08/20/91 Purchasing Agent: TA Manufacturer: Gen Dyn SUP: \$2112000.00 FY 90 Replacement Cost: \$0.00		Init Alt: 4 mos. Init Plt: 20 mos. Tot Init Prod Lt: 24 mos. Reorder Alt: 4 mos. Reorder Plt: 18 mos. Tot Reorder Lt: 22 mos. Production Line: Hot		In-Service Date: 09/01/91 Item Exit Data: 07/01/10 Life Exp (Combat): 0 mos. Life Exp (Noncmbt): 72 mos.	
				Replacement Factors	
				EIRFG/EIRFA: 0.2200 ESRFG/ESRFA: 0.2200 WIRFG/WIRFA: 0.0000 WSRFG/WSRFA: 0.2200 MTRF/AAEOR: 0.0000 PTRF/PTAER: 0.0000 ASSLT B/A: 0 ASSLT BAL M/O: 0	
Lap Indicators		Electrical Power Data		Shipping/Embarkation Planning Data	
Standardize: Y Tech Pubs: Y Tech Services: GFE: Test Eqpt: Y Trng: Y T/O Changes: MOS Changes: Eqpt Spec Tools: Y Eqpt Trng Device: Eqpt Calibration: Collateral Eqpt: Facilities Maint: N		HZ: 0 KW: 0.0 Source:  Air Conditioner Data  Ident: 0 Skd Mtd Ind: Qty: 0		Sq Stow Ind: Y Shipping Config: Length: 387 in. Width: 144 in. Height: 114 in. USP Qty: 1 USP Sq: 387.00 sqft USP Cube: 3677.00 cuft USP Wt: 128600 lb	
				MAGTF Lift Data	
				Cargo NML Ind: N Cargo NML Type: 0 Cargo NML Carrier Ind: 0 Cargo Compart Length: 0 in. Cargo Compart Width: 0 in. Cargo Compart Height: 0 in. Cargo Compart Weight: 0 lb	
				JCS Cargo Category Code	
				Pos.1 Type: A Pos.2 Cargo: 1 Pos.3 Contr: D	
Fuel Data		Allowance Info		TAMCN Associations	
Type GPH Hrs Per Day D 17.30 5.0		U/I: Ea Type Allow: O		Replacement Part Consists To Be For of of Replaced By E1875 E1876	
		Basis for Distribution			
		Qty Distribution T/E No			

LMIS ITEM DATA FILE		DESCRIPTIVE/REFERENCE DATA		DATE EFFECTIVE: 930215	
Identifying Data		Management Codes		Management Indicators	
AMCN/DODIC: D1158-VII-K Name of Item: Trk, Utility, Cargo Trp Carr, 5/4 T w/w Equip HMMWV Model No: M1038 CNSN: 2320-01-1077156 I.D. No: 08771A RCN: 03055122		SAC: 3 TIDC: Item Code: 5 Density Code: N Stdzn Cat Code: A Wpns Syst Code: SF NATO Equip Code:		Cmbt/Miss Essential: Y Controlled Item: Y Float: Y CSS: N MSL: N SET: No Units/Set: 0 IFIC: 0	
Acquisition Info		Acquisition Leadtimes		Life Cycle Info	
APS: WF 11 APO: 51/SSCMT GOR: ROC: LAP No: 013-78- LAP Date: 05/21/82 ALO No: 11240 ALO Date: 00/00/00 Purchasing Agent: TA Manufacturer: Am General SUP: \$21297.00 FY 89 Replacement Cost: \$24652.00		Init Alt: 3 mos. Init Plt: 12 mos. Tot Init Prod Lt: 15 mos. Reorder Alt: 3 mos. Reorder Plt: 12 mos. Tot Reorder Lt: 15 mos. Production Line: Hot		In-Service Date: 04/01/85 Item Exit Date: 08/01/04 Life Exp (Combat): 48 mos. Life Exp (Noncmbt): 72 mos.	
				Replacement Factors EIRFG/EIRFA: 0.0500 ESRFG/ESRFA: 0.0500 WIRFG/WIRFA: 0.0000 WSRFG/WSRFA: 0.0500 MTRF/AAEOR: 0.0075 PTRF/PTAER: 0.0020 ASSLT B/A: 0 ASSLT BAL M/O: 0	
Lap Indicators		Electrical Power Data		Shipping/Embarkation Planning Data	
Standardize: Y Tech Pubs: Tech Services: N GFE: N Test Eqpt: Trng: T/O Changes: N MOS Changes: N Eqpt Spec Tools: Eqpt Trng Device: Eqpt Calibration: N Collateral Eqpt: Facilities Maint:		HZ: 0 KW: 0.0 Source:  Air Conditioner Data  Ident: 0 Skd Mtd Ind: Qty: 0		Sq Stow Ind: Y Shipping Config: Length: 186 in. Width: 85 in. Height: 55 in. USP Qty: 1 USP Sq: 110.00 sqft USP Cube: 503.00 cuft USP Wt: 5140 lb	
				MAGTF Lift Data Cargo NML Ind: Cargo NML Type: 0 Cargo NML Carrier Ind: 0 Cargo Compartment Length: 0 in. Cargo Compartment Width: 0 in. Cargo Compartment Height: 0 in. Cargo Compartment Weight: 0 lb	
JCS Cargo Category Code				Pos.1 Type: Pos.2 Cargo: Pos.3 Contr:	
Fuel Data		Allowance Info		TAMCN Associations	
Type GPH Hrs Per Day D 1.70 8.0		U/I: Ea Type Allow: O		Replacement Part Consists To Be For of of Replaced By	
		Basis for Distribution			
Qty		Distribution		T/E No	

## TABLE OF AUTHORIZED MATERIEL

CLASS III ITEMS  
LOGISTICS PLANNING FACTORS, CLASS III REQUIREMENTS  
FUEL CONSUMING EQUIPMENT AND VEHICLES

TAMCN	FUEL CONSUMING ITEM DESCRIPTION	MODEL NO	TYPE FUEL	GAL PER HR	PER DAY	GAL PER DAY
D1062VIAK	CONTINUED FROM PRECEDING PAGE TRUCK, FIRE FIGHTING, CRASH/RESCUE, 4X4	M-1000	M D	17.60 11.60	4 4	70.40 46.40
D1070VIAK	TRUCK, DUMP, 51 6X6	M5142	M D	5.33	8	42.64
D1080VIAK	TRUCK, FIREFIGHTING, 1/4-TON, 4X4	MC1051	G	1.50	3	4.50
D1084VIAK	TRUCK, FIREFIGHTING, BRUSH	M530C8	P C	5.33	1	5.33
D1085VIAK	TRUCK, FIREFIGHTING, STRUCTURAL	M530CS	M D	5.33	1	5.33
D1087VIAK	TRUCK, MULTI-STOP, REPAIR PARTS 1 1/4-TON 4X4	M893	G	3.00	6	18.00
D1091VIAK	TRUCK, MAINT TELEPH/UTIL CONSTR 2 1/2-TON 6X6	M876	D	4.12	6	24.72
D1095VIAK	TRUCK, OIL SERV AIRCRAFT 2 1/2-TON 6X6 500 GAL	MA18, M57	G	5.00	3	15.00
D1100VIAK	TRUCK, PLATFORM, UTILITY, 1/2-TON 4X4	M274A5	G	1.30	6	7.80
D1110VIAK	TRUCK, TANK FUEL SERV'G 1200 GAL 1 1/2-TON 6X6 W/OW	M49A2C	M D	5.33	6	31.98
	TRUCK, TANK FUEL SERV'G 1200 GAL 2 1/2-TON 6X6 W/WN	M49A2C	M D		6	
D1120VIAK	TRUCK, TANK, WATER, 1000 GAL 2 1/2-TON, 6X6	M50A2	M D	5.33	4	21.32
D1130VIAK	TRUCK, TRACTOR, 5-TON, 6X6	M52A2	M D	5.33	8	42.64
D1140VIAK	TRUCK, TRACTOR, 10-TON, 6X6, W/WN	M123A1C	D	11.00	6	66.00
D1143VIAK	TRUCK, TRACTOR, 10-TON, 6X6 W/WN	M123B2	D	11.00	5	55.00
D1155VIAK	TRUCK, 1/4-TON, 4X4 GP EQUIPMENT (JEEP)	M151-A2	G	1.75	6	14.00
D1156VIAK	TRUCK, 1/4-TON, 4X4 GM CARRIER	M151-A2	G	1.75	8	14.00
D1160VIAK	TRUCK, UTILITY, 1/4-TON, 4X4	M151A2	G	1.50	8	12.00
D1190VIAK	TRUCK, VAN 2 1/2-TON, 6X6	M109A3	M D	5.33	4	21.32
D1210VIAK	TRUCK, WRECKER, 5-TON, 6X6	M543A2	M D	5.33	4	21.32
E0605VIIM	GUN, SELF-PROPELLED, PT, 175MM W/E	M-107	D	15.00	2	30.00
E0660VIIM	HOWITZER, MEDIUM, SP, 155MM	M109A3	D	15.00	2	30.00
E0692VIIM	HOWITZER, HEAVY, SP, 8 IN	M110A2	D	15.00	2	30.00
E0795VIAK	LANDING VEHICLE, TRACKED, COMMAND/ COMMUNICATION	LVTC-7	D	125.00	5	125.00
E0845VIAK	LANDING VEHICLE, TRACKED, PERS ASLT AMPH CARRIER	LVTP-7	D	125.00	5	125.00

5. Thus, when computing fuel usage for a particular unit, it will be necessary to compile the numbers of separate items of equipment that consume fuel; multiply the total numbers of separate items by the "gallons per day" figure (obtained by referring to the TAM or LMIS) for that particular item; and then totaling the resulting figures.

Example:

The S-4 of an infantry battalion has been tasked with computing daily fuel usage requirements for one of the companies in his battalion. The company has been "meched-up" for a particular operation, so its task organization has 4 tanks, 14 AAVs, and 4 HMMWVs. In computing fuel usage "per day," "both the TAM and LMIS lists for each piece of equipment what it considers the gallons per hour and number of hours that equipment will operate each day during combat operations. This figure can range, for example, from 1 hour per day for an airfield firefighting truck to 24 hours per day for a 7½-ton refrigerator van. Consulting the TAM, we find only the AAV, operating about 10 hours per day, will consume 125 gallons. Looking at LMIS we find that the M1A1 tank will consume 86.5 gallons of diesel fuel in a 5-hour day, the HMMWV will consume 13.6 gallons operating 8 hours per day\*.

Thus:

4 (M1A1) x 86.5 gallons per day	=	346.0 gallons
4 (HMMWVs) x 13.6 gallons per day	=	54.4 gallons
14 (AAVs) x 125 gallons per day	=	<u>1,750.0 gallons</u>
TOTAL (diesel)		= 2,150.4 gallons per day

The numbers provided in the TAM and LMIS are only a "starting point" for fuel usage computations. If, for example, you know that your tactical scheme of maneuver will cause you to operate a piece of equipment longer per day than what the TAM/LMIS denotes, then you will have to make adjustments to the TAM/LMIS numbers. Additionally, if experience has shown that an M1A1 tank drinks 22 gallons per hour then plan on using that figure. Experience is always better than numbers in the book.

\*An example of how the TAM is out of date concerning fuel usage for the M1A1 and HMMWV, both introduced after 1982. Consequently, the LMIS should be consulted for new (post 1982) equipment.



PRACTICE EXERCISE #4:

You are the S-4 of an infantry battalion, and one of your companies is taking part in a three-day operation as a "work-up" for your upcoming deployment with a MEU(SOC). The following items of equipment will be used during the three-day exercise (the figures are provided):

<u>Qty</u>	<u>Nomenclature</u>	<u>Type</u> <u>Fuel</u>	<u>Gal</u> <u>Per</u> <u>Hr</u>	<u>Hrs</u> <u>Per</u> <u>Day</u>	<u>Gal</u> <u>Per</u> <u>Day</u>
7	HMMWV	D	1.70	8	13.6
14	AAVP-7 (AAV)	D	25	5	125.0
4	M1A1 Tanks	D	22	5	110

- Using the above consumption figures, compute your daily fuel requirements for diesel.
- Compute the requirements for the entire three-day operation.



ANSWER TO PRACTICE EXERCISE #4:DIESEL:

$$\begin{array}{rcl} 7 \text{ (HMMWVs)} \times 13.6 \text{ gallons per day} & = & 95.2 \text{ gallons per day} \\ 14 \text{ (AAVs)} \times 125 \text{ gallons per day} & = & 1,750.0 \text{ gallons per day} \\ 4 \text{ (M1A1s)} \times 110 \text{ gallons per day} & = & \underline{440.0} \text{ gallons per day} \\ & & \text{TOTAL} = 2,285.2 \text{ gallons per day} \end{array}$$

For the three-day operation, we would merely multiply our computed daily rates by 3. Thus:

$$\text{For Diesel: } 2,285.2 \text{ gallons per day} \times 3 = \underline{6,855.6 \text{ gallons}}$$

STUDY RESOURCE #5: CLASS III - PACKAGED POLs

1. Computing requirements for "Packaged POLs" (i.e., gear oils, lubricating oils, greases, etc.) is based on the following chart, which again, is found in the TAM.

**TABLE OF AUTHORIZED MATERIEL  
CLASS III ITEMS**

1. For normal temperatures (above 32° F.), the recommended percentage of lubricants by SAE rating is as follows:

20% SAE 10; 65% SAE 30; and 15% SAE 50.

2. For cold weather climates (32° F. down to 0° F.), the recommended percentage of lubricants by SAE rating is as follows:

70% SAE 10; 25% SAE 20; 5% SAE 50.

3. For extreme cold climates (0° F. down to minus 65° F.), the recommended percentage of lubricants by SAE rating is as follows:

90° F. subzero; 10° SAE 10.

4. An addition of 0.12 gal/person/30 days either fuel oil, diesel, or kerosene is normally required for insect and rodent control purposes.

5. The following planning factors may be used to determine requirements of lube oil, gear lube, kerosene, and grease for units and organizations smaller than a reinforced brigade once fuel requirements have been determined:

a. Lubricating Oil, Internal Combustive Engine	3% of total gallons of Gasoline Automotive 3.5% of total gallons of Diesel Fuel*
b. Lubricating Oil, Gear: Universal Type	0.5% of total gallons of Gasoline Automotive and Diesel Fuel*
c. Kerosene	0.5% of total gallons of Gasoline Automotive and Diesel Fuel*
d. Greases (figures computed by use of percentage factors will be in pounds)	<u>Grease, Automotive and Artillery</u> 1% of total gallons of Gasoline Automotive 3% of total gallons of Diesel Fuel*

\*Do not include quantity of Diesel Fuel required for heating purposes.

2. As an example, to compute our requirements for lubricating oil, we take 3 percent of our MOGAS requirement, plus 3.5 percent of our diesel requirements.

3. Thus, if our daily MOGAS requirement is 1,000 gallons per day and our daily diesel requirement is 10,000 gallons per day, then our lubricating oil requirements are computed as follows:

3% of 1,000 = 30 gallons  
 3.5% of 10,000 = 350 gallons

30 gallons + 350 gallons = 380 gallons per day of lube oil

4. Another chart in the TAM shows the packaged POL--"units of issue." The page containing the lube oils is shown below:

CONTROL NO.	MSM	NOMENCLATURE	SPEC	REMARKS
P0370 IIIW	9150-00-  - 191-2772  - 189-6729  - 181-4097  - 188-9867  - 402-2372  - 491-7197	LUBRICATING OIL, INTERNAL COMBUSTION ENGINE  55 GAL DRUM (18 GAUGE)  55 GAL DRUM (18 GAUGE)  55 GAL DRUM (18 GAUGE)  55 GAL DRUM (18 GAUGE)  <u>SUBZERO</u>  5 GAL DRUM  55 GAL DRUM (18 GAUGE)	MIL-L-9000 ME 9110  ME 9170  ME 9250  ME 9500  MIL-L-10295	For use in internal combustion engines operating under normal load and temperature conditions          For use in lubrication of internal combustion engines operating in temperatures 0° F. to minus 65° F. and whenever a general purpose low temperature lubricating oil is desired.
P0380 IIIW	9150-00-352-6382	LUBRICATING OIL, WATCH:  5CC BOTTLE, EQUIPPED W/FINE DROPPER	MIL-L-3918	For use in lubricating of steel pivot and load bearing combinations in time pieces and other fine instruments at temperatures as low as 40° F.
P0383 IIIW	6840-00-623-7946	METHYL BROMIDE TECM		For use in water testing.
P0385 IIIW	DELETED-MARINE CORPS IS NOT A REGISTERED USER			
P0386 IIIW	DELETED-MSM IS CANCELLED, INACTIVE			
P0388 IIIW	6810-00-174-1824 -1825	DICHLORHIDE		Cleaning solvent.
P0410 IIIW	6830-00-286-5358	O-TOLIDIINE DINYDROCHLOHIDE SOLUTION		Used in water purification.
P0420 IIIW	6830-00-169-0800 -227-1862	OXYGEN TECHNICAL BULK	DD-O-925	For use in oxyacetylene flame for welding metals.
P0425 IIIW	DELETED-MARINE CORPS IS NOT A REGISTERED USER			
P0430 IIIW	9150-00-241-7899	PENETRATING OIL; MINERAL OIL	FED: VV-P-216	55 GAL DRUM (18 GAUGE) P0430 IIIW

		1 PT CAN		
P0435	IIIW	5350-00-232-0581	SAND, GRAIN, ABRASIVE, CAMMER 3% CAN	Used for cleaning spark plugs and sand blasting.
P0440	IIIW	DELETED-MARINE CORPS IS NOT A REGISTERED USER		
P0480	IIIW	6830-00-292-0531	NITROGEN, TECHNICAL 200G CG, FT. CY	Support of ordnance fire control system.

5. As we can see, lube oil comes in 55-gallon drums. So, for 380 gallons of lubricating oil, we will need 6.9 drums per day.

$$380 \div 55 = 6.9$$

Since we can't have fractions of drums, we round off to 7 drums of lubricating oil per day.

#### PRACTICE EXERCISE #5:

Based upon your computations for diesel fuel requirements from the previous practice exercise, compute your daily and three-day requirements for lubricating oil. Both in total gallons and number of drums.

ANSWER TO PRACTICE EXERCISE #5:

3% of 70 gallons (daily requirement for MOGAS) = 2.1 gallons

3.5% of 2,285.2 gallons (daily requirement for diesel) = 79.9 gallons

- Daily requirement of lube oil is  $2.1 + 79.9 = \underline{82.0 \text{ gallons}}$
- Three-day requirement is  $82.0 \times 3 = \underline{246.0 \text{ gallons}}$

The number of drums required for the three days is 246.0 "divided by" 55 = 4.4 drums

While we could round this figure (i.e., 4.4) off to the next higher round number, it would probably be unnecessary since an infantry company is, more than likely, operating as part of a larger force, and thus its lube oil requirements would be added to the requirements of the force.

STUDY RESOURCE #6: CLASS V (AVIATION AND GROUND AMMUNITION)

1. Class V(A) or aviation ammunition is a Navy-funded "blue dollar" commodity. It is stored in various worldwide locations afloat and ashore and is controlled by the Fleet CINCs. The document which delineates the planning factors for calculating Class V(A) is the Non-Nuclear Ordnance Requirements, OPNAVNOTE 8000. This document is classified SECRET. The annual Program Objective Memorandum (POM) updates are also used in calculating Class V(A) requirements.

Class V(A) requirements are variable and based on many factors, some of which are geographic location of the theater of operation; sustained rate of air operations, expressed in days: 1 day, 5 days, 60 days, 180 days, etc.; and, of course, the enemy threat. All the related factors are inputted into computer models with the output identifying the type and quantity of ordnance necessary to accomplish the mission.

What you need to understand about Class V(A) is that it is Navy funded and procured and that the type and quantity of ordnance will be determined on various factors as they apply to each unique operation. Due to the classified nature of determining Class V(A), you will not be required to calculate Class V(A) requirements during the academic year.

2. Class V(W) or ground ammunition is a Marine Corps-funded commodity. Class V(W) Combat Planning Factors (CPFs) for combat operations are calculated according to MCO 8010.1E. The tables to be discussed here list the CPFs which reflect the anticipated expenditure of weapon type and bulk-type ammunition over designated time periods of combat operations.

a. Three tables of CPFs are provided to assist commanders in more closely matching ground ammunition requirements to specific threats. These tables are based on JCS-developed major regional contingencies and reflect Marine Corps forces in mid-intensity combat against armor-heavy and infantry-heavy major ground forces. The last table is a composite of the two scenarios, for use when the type of conflict is ambiguous.

b. Brief descriptions of the scenarios used to derive the CPFs in the tables are provided below.

(1) The Infantry-Heavy Threat Combat Planning Factors are based on a scenario involving a Marine Air-Ground Task Force (MAGTF) stopping the advance of an opposing force within an assigned sector; defending in place while forces are built up in the area of operations; and then conducting offensive operations, including an amphibious assault. The opposing force is a regularly

organized infantry-heavy combined arms army supported by modern air forces.

(2) The Armor-Heavy Threat Combat Planning Factors are based on a scenario involving a MAGTF stopping the advance of an opposing force within an assigned sector; defending in place while forces are built up in the area of operations; and then conducting offensive operations, including an amphibious assault. The opposing force is a regularly organized armor-heavy combined arms army supported by modern air forces.

(3) The Composite Combat Planning Factors were determined by using weighted averages of the CPFs in the two scenario-based tables. This table is useful for planning in an uncertain environment, in which the probability is that the threat will be primarily infantry, but may be reinforced by unknown forces.

3. Using a few sample pages from the Composite Combat Planning Factors Table (pages 35 and 36), let's look at the columns in some detail:

COLUMN HEADING	EXPLANATION
<b>WEAPON</b> v Weapon ID	Identifies the weapon system/platform on which the rates are based. For example, rates for A131 (CTG 7.62mm Linked 4&1) are shown separately for the different Light Armored Vehicle variants, rather than for the M240 Machine Gun. If a weapon platform has multiple machine guns mounted, do not multiply the rate assigned to that platform. For example, the rate for 7.62mm ammunition for the M1A1 Tank already accounts for the presence of two machine guns.  The weapon ID will normally be the Table of Authorized Materiel Control Number (TAMCN) but may include any of the following:  ENGBN - The rates are shown as the number of rounds per Engineer Battalion in the MAGTF.  EODTM - The rates are shown as the number of rounds per 7-Man EOD Team in the MAGTF element.  GUNNR - The rates are shown as the number of rounds per STINGER gunner in the MAGTF element.

COLUMN HEADING	EXPLANATION
<p>w Nomenclature</p>	<p>INDIV - The rates are shown as the number of rounds per individual in the MAGTF element. Note: When the Basis of Issue for daily rates does not match the Basis of Issue for the Basic Allowance/Combat Load and the computation system being used requires that these bases match, use the following table:</p>



COLUMN HEADING	EXPLANATION																																																
	<table><tr><th><u>DODIC</u></th><th><u>GCE</u></th><th><u>NGCE</u></th></tr><tr><td>G881</td><td>.2406</td><td>.0180</td></tr><tr><td>G900</td><td>.0032</td><td>.0016</td></tr><tr><td>G930</td><td>.0096</td><td>.0032</td></tr><tr><td>G940</td><td>.0096</td><td>.0032</td></tr><tr><td>G945</td><td>.0096</td><td>.0032</td></tr><tr><td>G950</td><td>.0096</td><td>.0032</td></tr><tr><td>G955</td><td>.0096</td><td>.0032</td></tr><tr><td>L306</td><td>.0072</td><td>.0024</td></tr><tr><td>L307</td><td>.0072</td><td>.0024</td></tr><tr><td>L311</td><td>.0072</td><td>.0024</td></tr><tr><td>L312</td><td>.0072</td><td>.0024</td></tr><tr><td>L314</td><td>.0072</td><td>.0024</td></tr><tr><td>L323</td><td>.0072</td><td>.0024</td></tr><tr><td>L324</td><td>.0072</td><td>.0024</td></tr><tr><td>L495</td><td>.0064</td><td>.0449</td></tr></table> <p>INFBN - The rates are shown as the number of rounds per Infantry Battalion or Reconnaissance Battalion/Company in the MAGTF.</p> <p>MARDV - The rates are shown as the number of rounds per Marine Division.</p> <p>RECON - The rates are shown as the number of rounds per Reconnaissance Battalion or separate Reconnaissance Company in the MAGTF.</p> <p>SPOPS - The rates are shown as the number of rounds per Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)).</p> <p>SRAW - The rates are shown as the number of rounds per Short Range Antiarmor Weapon in the MAGTF element.</p> <p>Identifies, by standard nomenclature, the weapon system upon which the rates are based.</p>	<u>DODIC</u>	<u>GCE</u>	<u>NGCE</u>	G881	.2406	.0180	G900	.0032	.0016	G930	.0096	.0032	G940	.0096	.0032	G945	.0096	.0032	G950	.0096	.0032	G955	.0096	.0032	L306	.0072	.0024	L307	.0072	.0024	L311	.0072	.0024	L312	.0072	.0024	L314	.0072	.0024	L323	.0072	.0024	L324	.0072	.0024	L495	.0064	.0449
<u>DODIC</u>	<u>GCE</u>	<u>NGCE</u>																																															
G881	.2406	.0180																																															
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L324	.0072	.0024																																															
L495	.0064	.0449																																															
AMMUNITION w DODIC	Identifies, by DODIC, the applicable ammunition item.																																																
w Nomenclature	Identifies, by standard nomenclature, the applicable ammunition item.																																																

COLUMN HEADING	EXPLANATION
<p>GCE RATES</p> <p>w Daily Assault</p> <p>w Daily Sustain</p> <p>w Basic Allowance</p>	<p>The Daily Assault Rate, Daily Sustaining Rate, and Basic Allowance (BA) are shown for weapons (or individuals, etc.) in the Ground Combat Element (GCE) of the MAGTF.</p> <p>The rate is shown as the number of rounds per day per weapon (or individual, etc.) in the GCE during the assault (intense) phase of combat.</p> <p>The rate is shown as the number of rounds per day per weapon (or individual, etc.) in the GCE during the sustaining phase of combat.</p> <p>Indicates the BA of the ammunition item recommended to be carried within the means normally available to an FMF unit embarking and debarking for combat operations. Such means include (but are not limited to) self-propelled vehicles and authorized prime movers. The BAs shown in the tables are provided only as guides and are not directive in nature. The BA is included in the computation of the unconstrained requirement and is not additive to it. The BA is also known as Combat Load. The BA is intended to correspond to the term Combat Load which is used in DOD publications.</p>
<p>OTHER-THAN-GCE RATES</p> <p>w Daily Assault</p> <p>w Daily Sustain</p> <p>w Basic Allowance</p>	<p>The Daily Assault Rate, Daily Sustaining Rate, and Basic Allowance are shown for weapons (or individuals, etc.) in the Command Element (CE), Aviation Combat Element (ACE), and Combat Service Support Element (CSSE) of the MAGTF.</p> <p>The rate is shown as the number of rounds per day per weapon (or individual, etc.) in the CE, ACE, and CSSE during the assault (intense) phase of combat.</p> <p>The rate is shown as the number of rounds per day per weapon (or individual, etc.) in the CE, ACE, and CSSE during the sustaining phase of combat.</p> <p>Indicates the BA of the ammunition item recommended to be carried within the means normally available to an FMF unit embarking and debarking for combat operations. Such means include (but are not limited to) self-propelled vehicles and authorized prime movers. The BAs shown in the tables are provided only as guides and are not directive in nature. The BA is included in the computation of the unconstrained requirement and is not additive to it. The BA is also known as Combat Load.</p>

4. Unfortunately, MCO 8010.1E does not provide planning data on the weight, cube, and unit pack for ammunition. However, this information can be found in Chapter 2 of MCO P8011.4H. A sample page 37 has been provided with the column descriptions below:

a. DODIC. This column includes the preferred Department of Defense Identification Code (DODIC). The indented DODICs are substitutes for the preferred DODIC immediately above.

b. Item Description. This column includes the nomenclature, model, and TAM number of the consuming major end item. Listed below are all ammunition types required for the weapons organic to the end item; I.e., primary weapon and on vehicle-mounted equipment weapons.

c. Unit Pack. This column includes the number of rounds per unit pack or intermediate pack, where applicable, of the preferred national stock number (NSN). Units authorized less than unit pack or intermediate pack will be furnished the nearest unit pack or intermediate to preclude damage of materiel. Items in excess of allowances are to be retained for future requirement; e.g., small arms, blasting caps, detonating cords, etc.

d. Weight. This column includes the weight of the unit pack of the preferred NSN.

e. Cube. This column includes the cubic feet of the unit pack of the preferred NSN.

## Composite Combat Planning Factors Table

Composite Combat Planning Factors Table										
Weapon ID Sequence										
Weapon			Ammunition		GCE RATES			Other than GCE Rates		
Weapon ID	Nomenclature	OODIC	Nomenclature		Daily ASSAULT	Daily SUSTAIN	Basic Allowance	Daily ASSAULT	Daily SUSTAIN	Basic Allowance
E0665	HOWITZER MED TOWED 155MM M198	D528	PROJ, 155MM SMOKE WP		0.60087	0.28126	5.97			
E0665	HOWITZER MED TOWED 155MM M198	D532	CHG, PROP 155MM RED BAG		18.21995	3.61825	40.5			
E0665	HOWITZER MED TOWED 155MM M198	D533	CHG, PROP 155MM WHITE BAG		5.32647	1.35656	20.19			
E0665	HOWITZER MED TOWED 155MM M198	D540	CHG, PROP 155MM GREEN BAG		2.89238	0.72240	10.55			
E0665	HOWITZER MED TOWED 155MM M198	D541	CHG, PROP 155MM WHITE BAG		13.53275	3.47174	52.02			
E0665	HOWITZER MED TOWED 155MM M198	D544	PROJ, 155MM HE		9.95307	2.69852	32.93			
E0665	HOWITZER MED TOWED 155MM M198	D550	PROJ, 155MM SMOKE WP		1.46983	0.32470	1.99			
E0665	HOWITZER MED TOWED 155MM M198	D563	PROJ, 155MM HEDP (ICM)		4.68309	0.53966	31.56			
E0665	HOWITZER MED TOWED 155MM M198	D579	PROJ, 155MM HERA		9.95307	2.69852	12.97			
E0665	HOWITZER MED TOWED 155MM M198	D864	PROJ, 155MM DP-ICM BASEBLEED		4.68309	0.53966	22.76			
E0665	HOWITZER MED TOWED 155MM M198	N289	FUZE, ELECTRONIC TIME M762		13.67025	2.72579	67.27			
E0665	HOWITZER MED TOWED 155MM M198	N290	FUZE, ELECTRONIC TIME M767		3.59064	0.91816	5.73			
E0665	HOWITZER MED TOWED 155MM M198	N291	FUZE, PROXIMITY VT		2.48827	0.67463	8.23			
E0665	HOWITZER MED TOWED 155MM M198	N340	FUZE PD M739		16.36586	4.41504	36.32			
E0665	HOWITZER MED TOWED 155MM M198	N523	PRIMER PERCUSSION		37.97155	9.16895	123.26			
E0665	HOWITZER MED TOWED 155MM M198	N658	FUZE, PD CONCRETE PIERCING		0.19906	0.05397	0.66			
E0766	ASSLT AMPH VEH COMMAND AAVC7A1	A131	CTG, 7.62MM 4 & 1 LINKED		33.91810	22.13762	1000			
E0846	ASSLT AMPHIB VEH PERS AAVP7A1	A518	CTG, CAL. 50 SLAP 4 & 1 LINKED		5.53274	0.37906	100			
E0846	ASSLT AMPHIB VEH PERS AAVP7A1	A576	CTG, CAL. 50 4 & 1 LINKED		116.18750	7.96018	2100			
E0846	ASSLT AMPHIB VEH PERS AAVP7A1	B542	CTG, 40MM HEDP LINKED FOR MK19		38.63321	11.43712	864			
E0846	ASSLT AMPHIB VEH PERS AAVP7A1	G828	GRENADE, LAUNCHER SMOKE IR		2.22667	1.45560	8			
E0856	ASSLT AMPH VEH RECOVERY AAVR7A1	A131	CTG, 7.62MM 4 & 1 LINKED		17.92989	10.50648	400	17.92989	10.50648	400
E0892	LAUNCHER GRENADE 40MM M203	B504	CTG, 40MM GREEN STAR PARACHUTE		0.39732	0.01498	0.3	0.04419	0.02652	0.3
E0892	LAUNCHER GRENADE 40MM M203	B505	CTG, 40MM RED STAR PARACHUTE		0.39732	0.01498	0.3	0.03469	0.02652	0.3
E0892	LAUNCHER GRENADE 40MM M203	B506	CTG, 40MM RED SMOKE GROUND		0.19534	0.02479	0.25	0.02000	0.01945	0.25
E0892	LAUNCHER GRENADE 40MM M203	B508	CTG, 40MM GREEN SMOKE GROUND		0.19534	0.02479	0.5	0.02000	0.01945	0.5
E0892	LAUNCHER GRENADE 40MM M203	B509	CTG, 40MM YELLOW SMOKE GROUND		0.19534	0.02479	0.25	0.02000	0.01945	0.25
E0892	LAUNCHER GRENADE 40MM M203	B535	CTG, 40MM WHITE STAR PARACHUTE		0.48272	0.02271	2	0.04910	0.02243	2
E0892	LAUNCHER GRENADE 40MM M203	B546	CTG, 40MM HEDP FOR M79/M203		1.02964	1.14233	18	0.90278	0.74066	18
E0915	LAUNCHER ASSAULT ROCKET (SMAW)	HX05	ROCKET, 83MM HE DUALMODE		1.88542	0.48987	3			
E0915	LAUNCHER ASSAULT ROCKET (SMAW)	HX06	ROCKET 83MM, HE ANTIARMOR		0.33088	0.15320	4.5			
E0935	LAUNCHER TUBULAR F/ GM TOW	PV16	GUIDED MISSILE, TOW II-B		0.10114	0.01880	1			
E0935	LAUNCHER TUBULAR F/ GM TOW	PV47	GUIDED MISSILE, TOW II-A		0.40455	0.07522	4			

## Composite Combat Planning Factors Table

Composite Combat Planning Factors Table										
Weapon ID Sequence										
Weapon			Ammunition		GCE RATES			Other than GCE Rates		
Weapon ID	Nomenclature	DDIC	Nomenclature	Daily ASSAULT	Daily SUSTAIN	Basic Allowance	Daily ASSAULT	Daily SUSTAIN	Basic Allowance	
E0980	MG CAL .50 BROWNING HB M2	A576	CTG, CAL .50 4 & 1 LINKED	107.99756	78.64917	400	18.09729	8.93089	400	
E0989	MACHINE GUN 7.62MM M240G	A131	CTG, 7.62MM 4 & 1 LINKED	51.69756	7.65923	800	17.83177	10.06473	800	
E0994	MACHINE GUN 40MM MK-19 MOD-3	B542	CTG, 40MM HEDP LINKED FOR MK19	27.47484	16.98928	288	15.08290	9.67788	288	
E1065	MORTAR 60MM LWCMS	B642	CTG, 60MM HE WITH MOF	2.81277	0.87860	10	1.76172	0.58860	10	
E1065	MORTAR 60MM LWCMS	B643	CTG, 60MM HE	6.56313	2.05007	22	4.11068	1.36874	22	
E1065	MORTAR 60MM LWCMS	B646	CTG, 60MM SMOKE WP	8.98084	4.28232	8	5.12284	2.46538	8	
E1065	MORTAR 60MM LWCMS	B647	CTG, 60MM ILLUM	4.28507	1.15968	8	1.01197	0.36725	8	
E1095	MORTAR MED 81MM M252	C484	CTG, 81MM ILLUM INFRARED	2.57789	1.04743	6				
E1095	MORTAR MED 81MM M252	C668	CTG, 81MM HE WITH MOF	3.43670	0.46188	23				
E1095	MORTAR MED 81MM M252	C869	CTG, 81MM HE WITH PD FUZE	5.18127	1.07773	55				
E1095	MORTAR MED 81MM M252	C870	CTG, 81MM SMOKE RP	4.09793	0.13802	6				
E1095	MORTAR MED 81MM M252	C871	CTG, 81MM ILLUM	3.10092	0.64417	6				
E1153	NITE VIS SIGHT TRACKER DRAGON	PM80	DRAGON MISSILE, MK1-0	0.18782	0.03989	2				
E1250	PISTOL SEMIAUTO 9MM M9	A363	CTG, 9MM BALL	0.93943	0.79728	30	0.88228	0.68746	30	
E1377	RECOVERY VEHICLE FT MED M88A1	A518	CTG, CAL .50 SLAP 4 & 1 LINKED	1.27202	1.55023	100	1.27202	1.55023	100	
E1377	RECOVERY VEHICLE FT MED M88A1	A576	CTG, CAL .50 4 & 1 LINKED	19.92829	24.28686	100	19.92829	24.28686	100	
E1377	RECOVERY VEHICLE FT MED M88A1	G826	GRENADE, LAUNCHER SMOKE IR	3.09741	1.82482	16	3.09741	1.82482	16	
E1441	RIFLE 5.56MM HB M16A2	A059	CTG, 5.56MM BALL	9.87846	3.88487	350	6.20342	4.18964	200	
E1441	RIFLE 5.56MM HB M16A2	A063	CTG, 5.56MM TRACER	4.18372	0.99260	10	0.61703	0.52073	10	
E1460	SNIPER RIFLE 7.62MM M40A1	AA11	CTG, 7.62MM BALL MATCH	14.83880	21.44305	100				
E1475	SNIPER RIFLE CAL .50 SASR	A518	CTG, CAL .50 SLAP 4 & 1 LINKED				3.38000	3.38000	100	
E1475	SNIPER RIFLE CAL .50 SASR	A808	CTG, CAL .50 API SNIPER RIFLE	6.66500	14.08071	100	3.38000	3.38000	100	
E1764	SHOTGUN AUTOMATIC COMBAT	A011	CTG, 12 GAGE #00 BUCKSHOT	1.09899	1.27809	30	0.58688	0.44439	30	
E1836	AVENGER STINGER LAUNCH SYSTEM	A518	CTG, CAL .50 SLAP 4 & 1 LINKED				2.47019	0.33594	270	
E1836	AVENGER STINGER LAUNCH SYSTEM	A576	CTG, CAL .50 4 & 1 LINKED				68.26709	9.28424	630	
E1836	AVENGER STINGER LAUNCH SYSTEM	PL87	GUIDED MISSILE, STINGER				0.20679	0.04034		

## 2201. MARINE CORPS TABLE OF ALLOWANCES FOR CLASS V(W) MATERIEL (PEACETIME)

DODIC	Item Description	Unit Pack	Wt	Cube
B568	HE M406 w/Fz PD M551 (T359E1) 6-Rd or 4-Rd Band 24/Ctn	72/24	53	1.30
B569	HE ICM M397 w/Fz PD M536 6-Rd Band	72	63.6	1.66
B567	Tactical CS XM651E1 w/Fz PD XM581E1 6-Rd Band 24/Fbrbd Bx	24/6	21.2	

MACHINE GUN, 40MM, MK 19 MOD 1 AND MOD 3 (TAM #E0994) Ctg 40mm:

B472	Dummy M922 Linked w/M16A2 Links 10-Rd Belt/M2A1 Mtl Bx	20/10	35.5	.85
B542	HE DP M430 Linked w/M16A2 Links 48-Rd Belt/M548 Mtl Cntr	48	59.4	1.2
B571	HE M383 Linked w/M16A2 Links 50-Rd Belt/Wdn Bx	50	66.2	2.0
B584	Practice M918 Linked w/M16A2 Links 48-Rd Belt/M548 Mtl Cntr	48	73.7	1.6
B576	Practice M385E4 Linked w/M16A2 Links 48-Rd Belt/M548 Mtl Cntr	48	75.6	1.6
B480	TP M385 Linked w/M16A1 Links 50-Rd Belt/Wdn Bx	50	28.7	1.5

2202. MORTARSMORTAR, 60MM, M19 OR M2 (TAM #E1060) Ctg 60mm:

B621	Ignition Ctg M4 f/B629	As required	TBD	TBD
B624	Fin Assembly M5 f/B629	Various	TBD	TBD
B629	Projectile Training M69 20/M12 Wdn Bx	20/1	TBD	TBD
B634	TP M50A3 (M50A2E1) w/Fz PD M525	10	35	.73
B643	HE M49A4 (M49A2E2) w/Fz PD M525	16/8	58.8	1.74
B646	Smk WP M302A2 (M302A1E1) w/Fz PD M527B1	16/8	44.1	1.31

PRACTICE EXERCISE #6:

MCO 8010.1E is a planning document that is used at the higher levels of command. The G-4 at FMFLANT and FMFPAC would use it to plan for ammunition allocations. The ammunition officers at the MEF level and perhaps at the division level would also use it. A Battalion S-4 using MCO 8010.1E could roughly plan for his battalion's anticipated ammunition requirements. For the sake of introducing you to MCO 8010.1E, let's work through a few self-test questions.

1. You are the S-4 of an infantry battalion. Your battalion, as part of a MAGTF, has been assigned the mission of conducting an amphibious surface assault against a threat in support of a friendly Third World government that is primarily infantry but could be reinforced by unknown forces. What combat planning factor table would you use for your ammunition planning purposes?

2. Your battalion commander anticipates his Marines will be in heavy combat for the first two days. With this guidance, how many rounds would you plan to issue as a basic allowance and provide as resupply the first two days for the following?

a. A059 for M16A2s? (Assume 622 M16A2s in your battalion.)

b. A131 for your machine gunners? (Assume 29 M240G machine guns.)

3. What will your attached AAV Co rate for two days in the assault and three days as sustained using A576 and B542 with 45 AAVP-7s?

4. As the CSSE S-4 for this MAGTF, your commander gives you the same guidance as your infantry battalion S-4 counterpart received. How many rounds of 9mm ball ammunition should you plan to issue as a basic allowance and provide as resupply the first two days? (Assume 50 9mm pistols.)

5. Using the table from MCO P8011.4H (on page 38), calculate the number of unit packs and the total weight for the B542 in problem #3 above.





ANSWER TO PRACTICE EXERCISE #6:

1. What combat planning factor table would you use for your ammunition planning purposes?

The Composite Combat Planning Factors Table

2. With this guidance, how many rounds should you plan to issue as a basic allowance and provide as a resupply for the first two days for the following?

a. A059 for M16A2s? (Assume 622 M16A2s in your battalion.)

GCE BA =  $350 \times 622 \text{ M16A2s} = 217,700 \text{ rounds}$

RATES: Daily Assault =  $9.88 \times 622 \text{ M16A2s} = 6145.36 \text{ rounds} \times 2 \text{ days} = 12,291 \text{ rounds for resupply}$

b. A131 for your machine gunners? (Assume 29 M240G machine guns.)

GCE BA =  $800 \times 29 \text{ M240G} = 23,200 \text{ rounds}$

RATES: Daily Assault =  $51.70 \times 29 \text{ M240G} = 1499.3 \text{ rounds} \times 2 \text{ days} = 2,999 \text{ rounds for resupply}$

3. What will your attached AAV Co rate for first two days in the assault and three days as sustained for A516 and B542 with 45 AAVP-7s?

GCE A576

RATES: Daily Assault =  $116.19 \times 45 \text{ AAVs} = 5228.55 \times 2 \text{ days} = 10,457 \text{ rounds}$

Daily Sustain =  $7.96 \times 45 \text{ AAVs} = 358.2 \times 3 \text{ days} = 1,075 \text{ rounds}$

B542

Daily Assault =  $38.63 \times 45 \text{ AAVs} = 1738.35 \times 2 \text{ days} = 3,477 \text{ rounds}$

Daily Sustain =  $11.44 \times 45 \text{ AAVs} = 514.8 \times 3 \text{ days} = 1,544 \text{ rounds}$

4. How many rounds of 9mm ball ammunition should you plan to issue as a basic allowance and provide as a resupply for the first two days? (Assume 50 9mm pistols.)

Other than GCE Rates: BA =  $30 \times 50 \text{ 9mm pistols} = 1,500 \text{ rounds}$   
 Daily assault =  $0.88 \times 50 \text{ 9mm pistols} = 44 \times 2 \text{ days} = 88 \text{ rounds}$

5. Using the table from MCO P8011.4H (on page 38), calculate the number of unit packs and the total weight for the B542 in problem #3 above.

$$\begin{array}{r} \underline{3,477} \\ \text{Total} \\ \text{Assault} \end{array} + \begin{array}{r} \underline{1,544} \\ \text{Total} \\ \text{Sustain} \end{array} = 5,021 \text{ total B542 rounds}$$

$$\frac{5,021}{\text{Total Rds}} \div \frac{48}{\text{Rds/Unit Pack}} = 104.6 \text{ unit packs or 105 (rounded off)}$$

$$\frac{105}{\text{Unit Packs}} \times \frac{59.4}{\text{Lb/Unit Pack}} = 6,237 \text{ lbs total B542 weight}$$